FIG.1

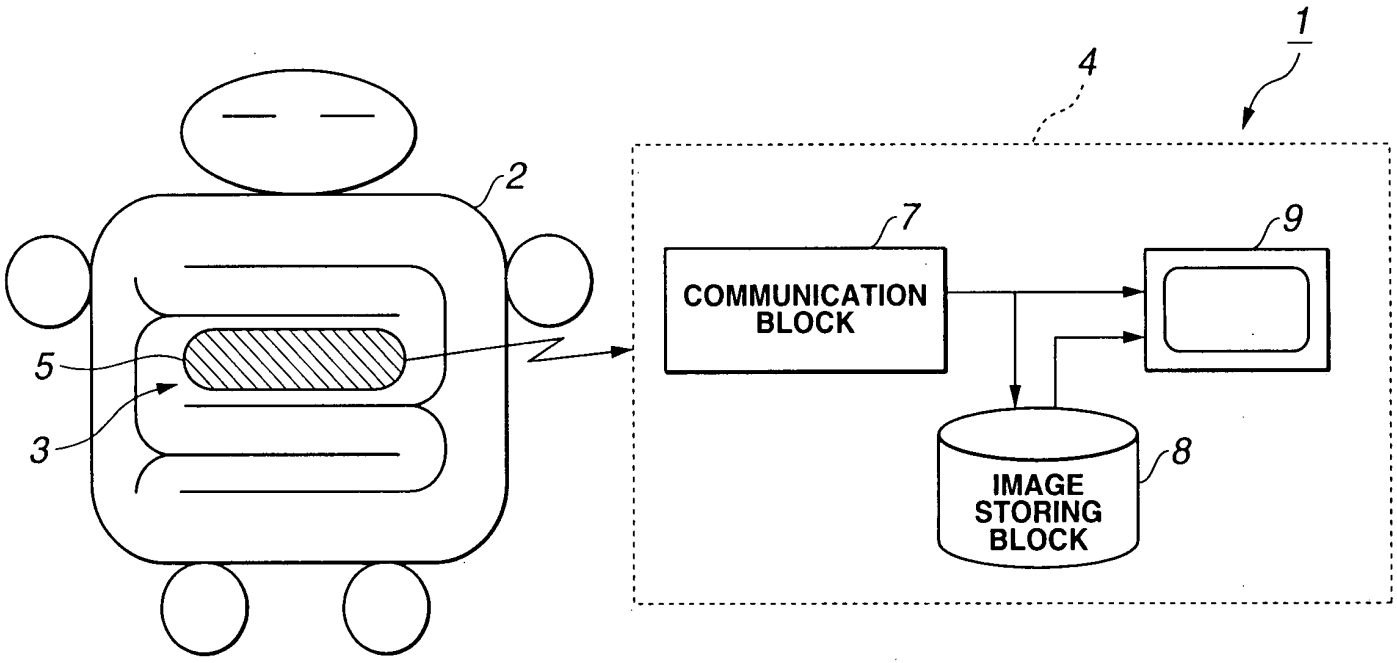


FIG.2

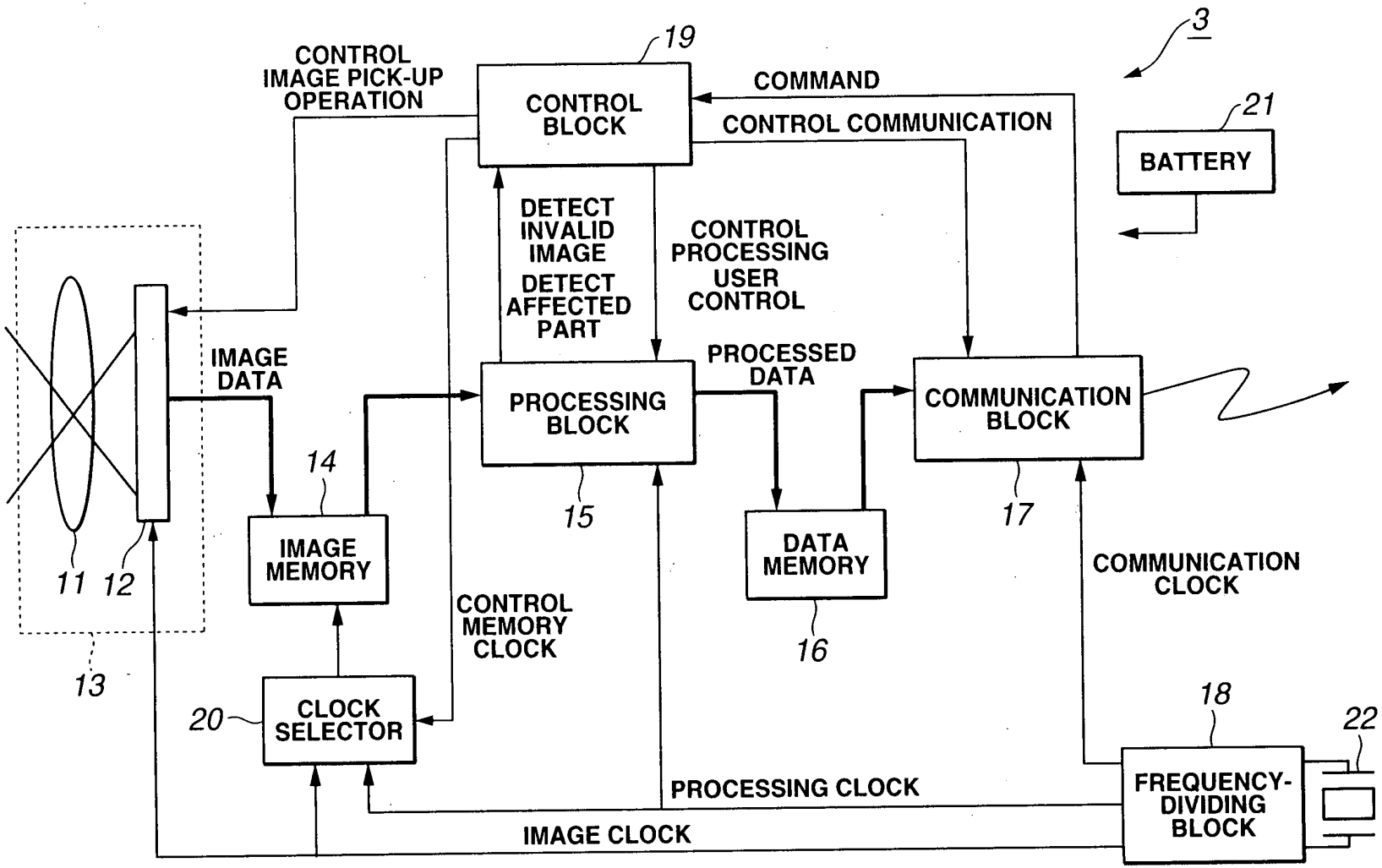

3
19
CONTROL IMAGE PICK-UP OPERATION
CONTROL BLOCK
COMMAND
CONTROL COMMUNICATION
21
BATTERY
DETECT INVALID IMAGE
DETECT AFFECTED PART
CONTROL PROCESSING USER CONTROL
IMAGE DATA
PROCESSED DATA
PROCESSING BLOCK
COMMUNICATION BLOCK
14
15
17
IMAGE MEMORY
DATA MEMORY
COMMUNICATION CLOCK
11
12
13
16
CONTROL MEMORY CLOCK
20
CLOCK SELECTOR
18
22
PROCESSING CLOCK
FREQUENCY-DIVIDING BLOCK
IMAGE CLOCK

FIG.3

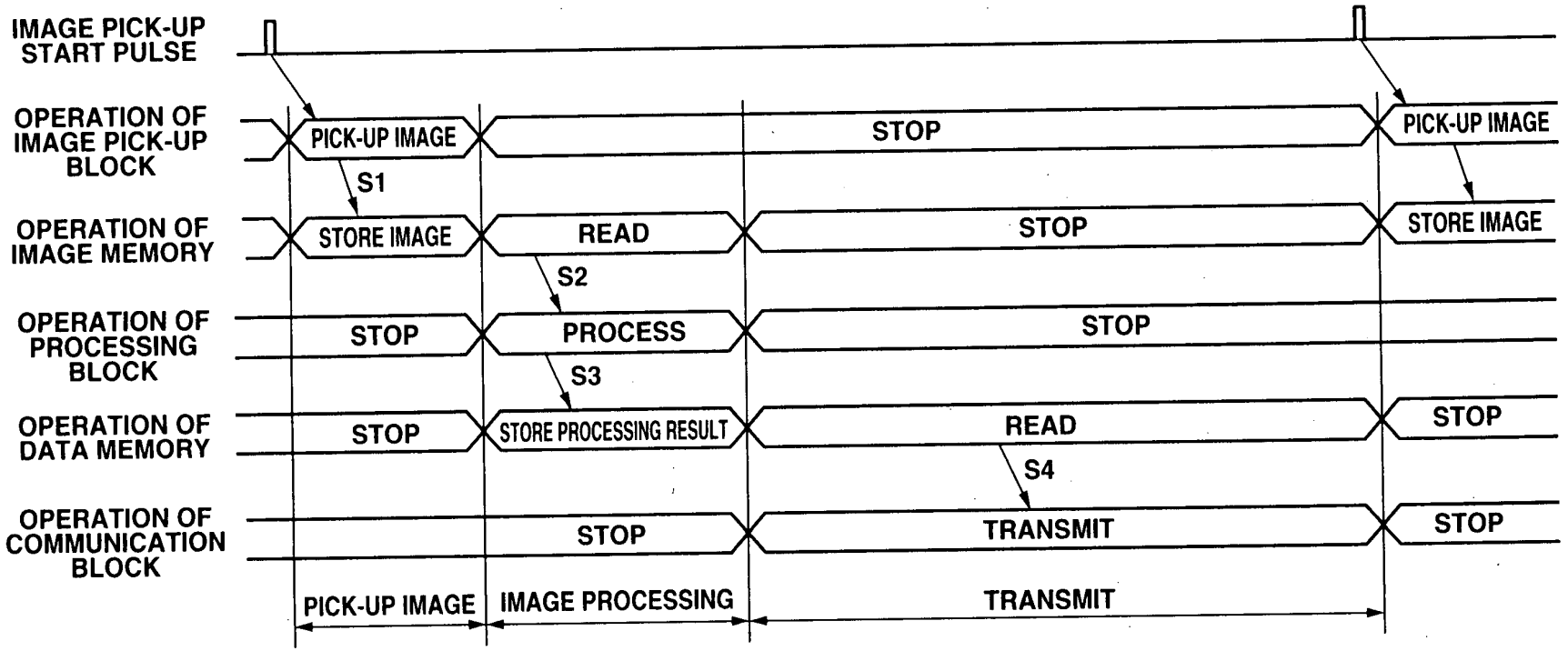


IMAGE PICK-UP START PULSE
OPERATION OF IMAGE PICK-UP BLOCK
PICK-UP IMAGE
STOP
PICK-UP IMAGE
S1
OPERATION OF IMAGE MEMORY
STORE IMAGE
READ
STOP
STORE IMAGE
S2
OPERATION OF PROCESSING BLOCK
STOP
PROCESS
STOP
S3
OPERATION OF DATA MEMORY
STOP
STORE PROCESSING RESULT
READ
STOP
S4
OPERATION OF COMMUNICATION BLOCK
STOP
TRANSMIT
STOP
PICK-UP IMAGE
IMAGE PROCESSING
TRANSMIT

FIG.4

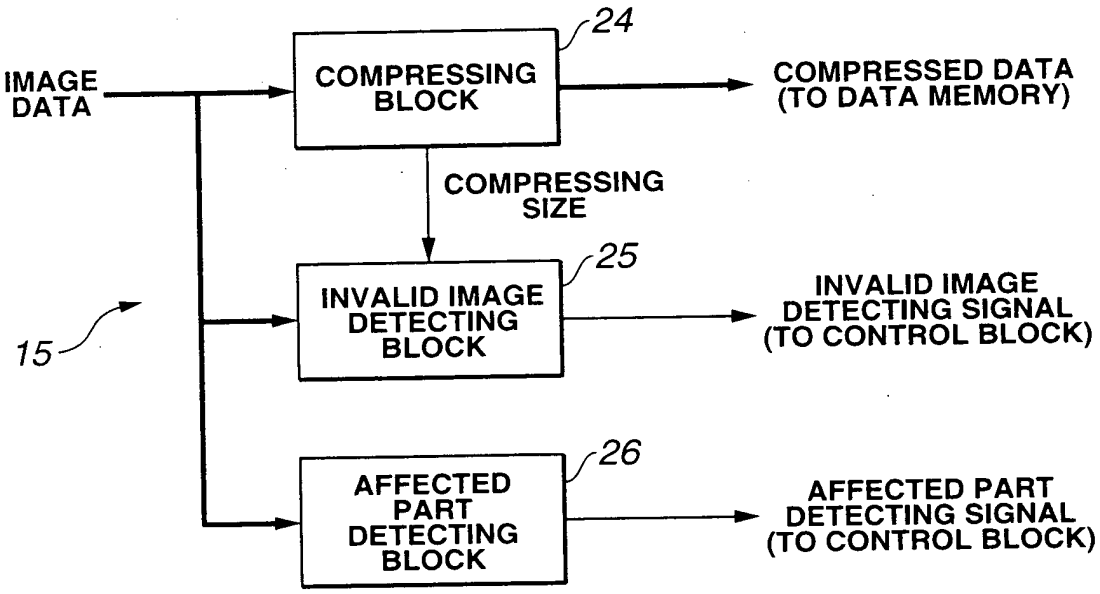


IMAGE DATA
COMPRESSING BLOCK
24
COMPRESSED DATA (TO DATA MEMORY)
COMPRESSING SIZE
INVALID IMAGE DETECTING BLOCK
25
INVALID IMAGE DETECTING SIGNAL (TO CONTROL BLOCK)
15
AFFECTED PART DETECTING BLOCK
26
AFFECTED PART DETECTING SIGNAL (TO CONTROL BLOCK)

FIG.5

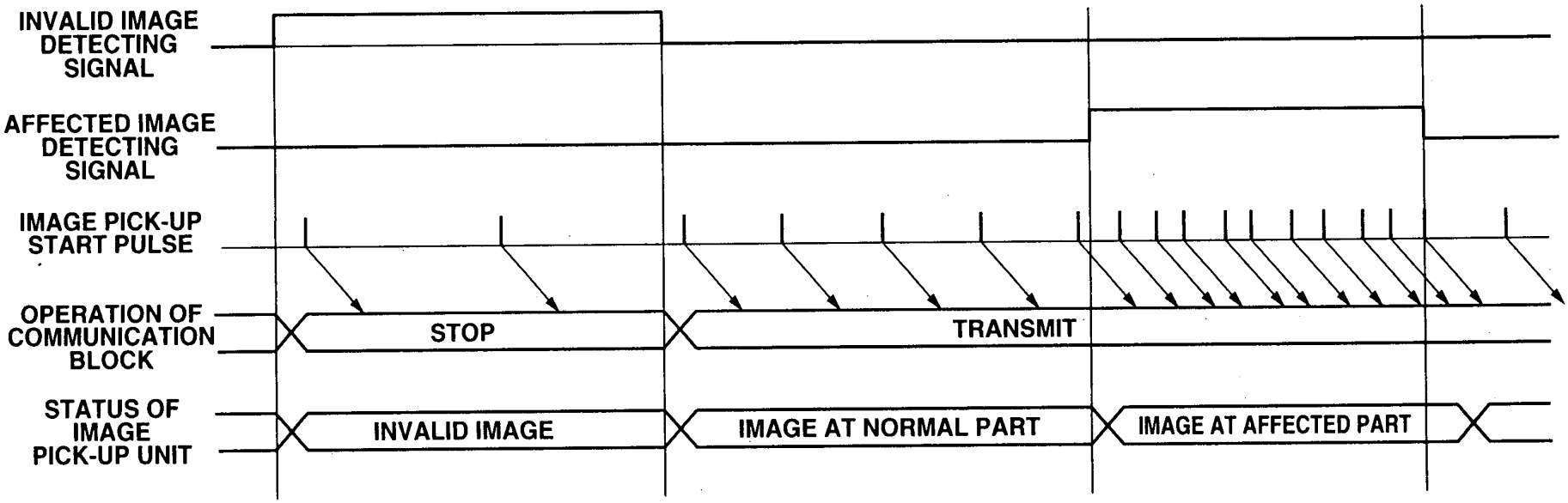

INVALID IMAGE DETECTING SIGNAL
AFFECTED IMAGE DETECTING SIGNAL
IMAGE PICK-UP START PULSE
OPERATION OF COMMUNICATION BLOCK
STOP
TRANSMIT
STATUS OF IMAGE PICK-UP UNIT
INVALID IMAGE
IMAGE AT NORMAL PART
IMAGE AT AFFECTED PART

FIG.6

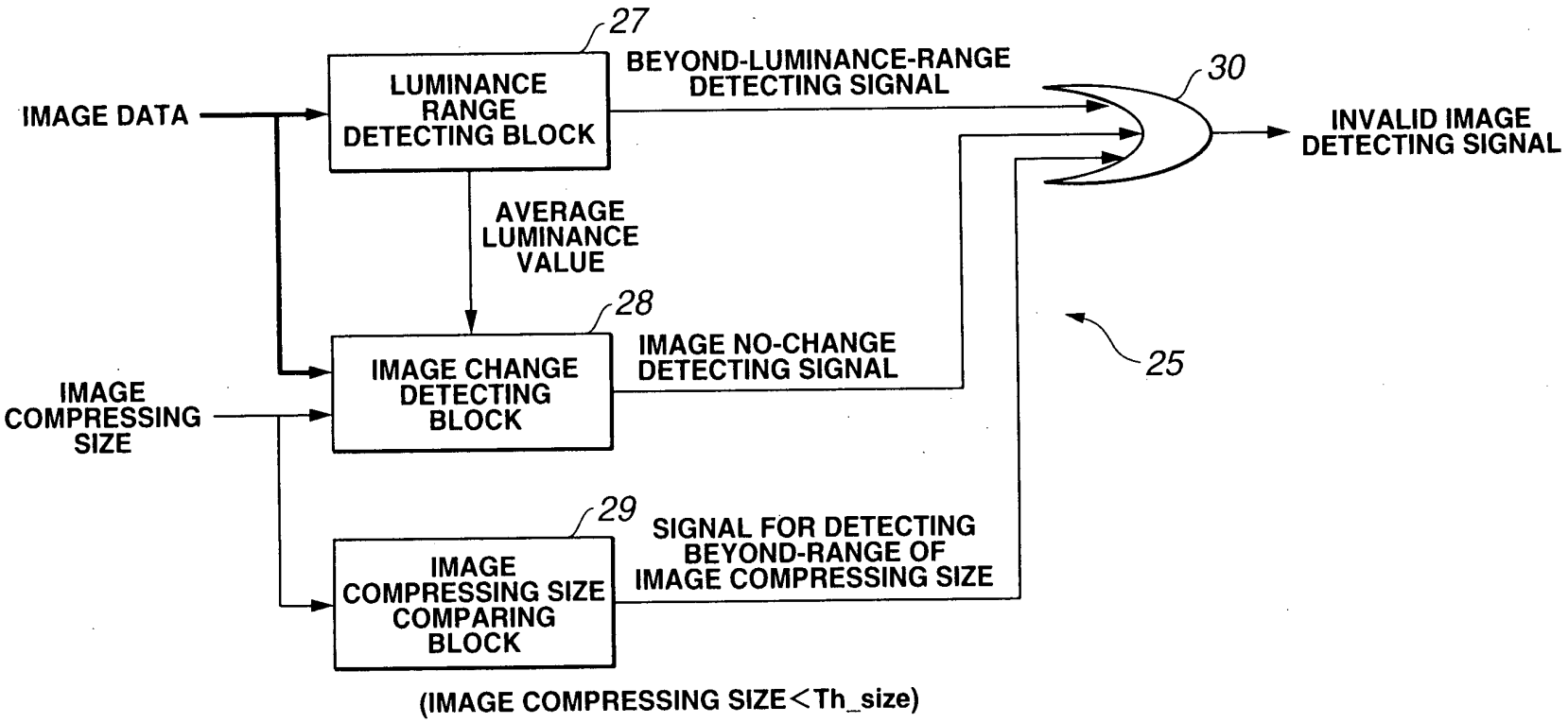

27
LUMINANCE RANGE DETECTING BLOCK
BEYOND-LUMINANCE-RANGE DETECTING SIGNAL
30
IMAGE DATA
INVALID IMAGE DETECTING SIGNAL
AVERAGE LUMINANCE VALUE
28
IMAGE CHANGE DETECTING BLOCK
IMAGE NO-CHANGE DETECTING SIGNAL
25
IMAGE COMPRESSING SIZE
29
IMAGE COMPRESSING SIZE COMPARING BLOCK
SIGNAL FOR DETECTING BEYOND-RANGE OF IMAGE COMPRESSING SIZE
(IMAGE COMPRESSING SIZE<Th_size)

FIG.7

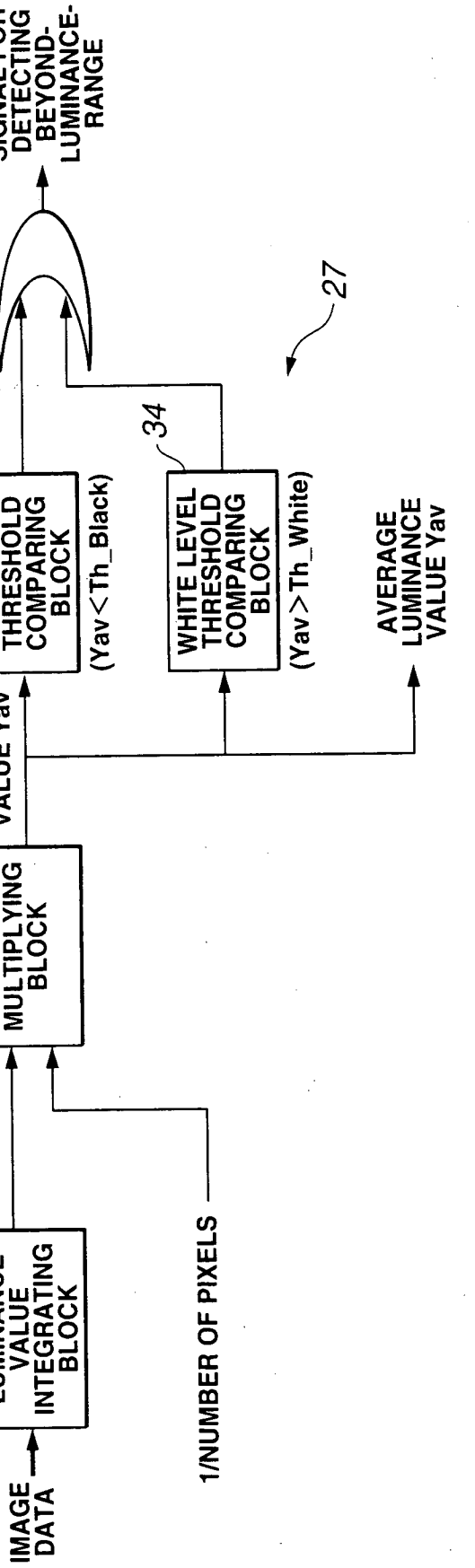


IMAGE DATA
LUMINANCE VALUE INTEGRATING BLOCK
31
LUMINANCE VALUE
INTEGRATED VALUE
1/NUMBER OF PIXELS
MULTIPLYING BLOCK
32
AVERAGE LUMINANCE VALUE Yav
BLACK LEVEL THRESHOLD COMPARING BLOCK
33
(Yav<Th_Black)
WHITE LEVEL THRESHOLD COMPARING BLOCK
34
(Yav>Th_White)
AVERAGE LUMINANCE VALUE Yav
35
SIGNAL FOR DETECTING BEYOND-LUMINANCE-RANGE
27

FIG.8

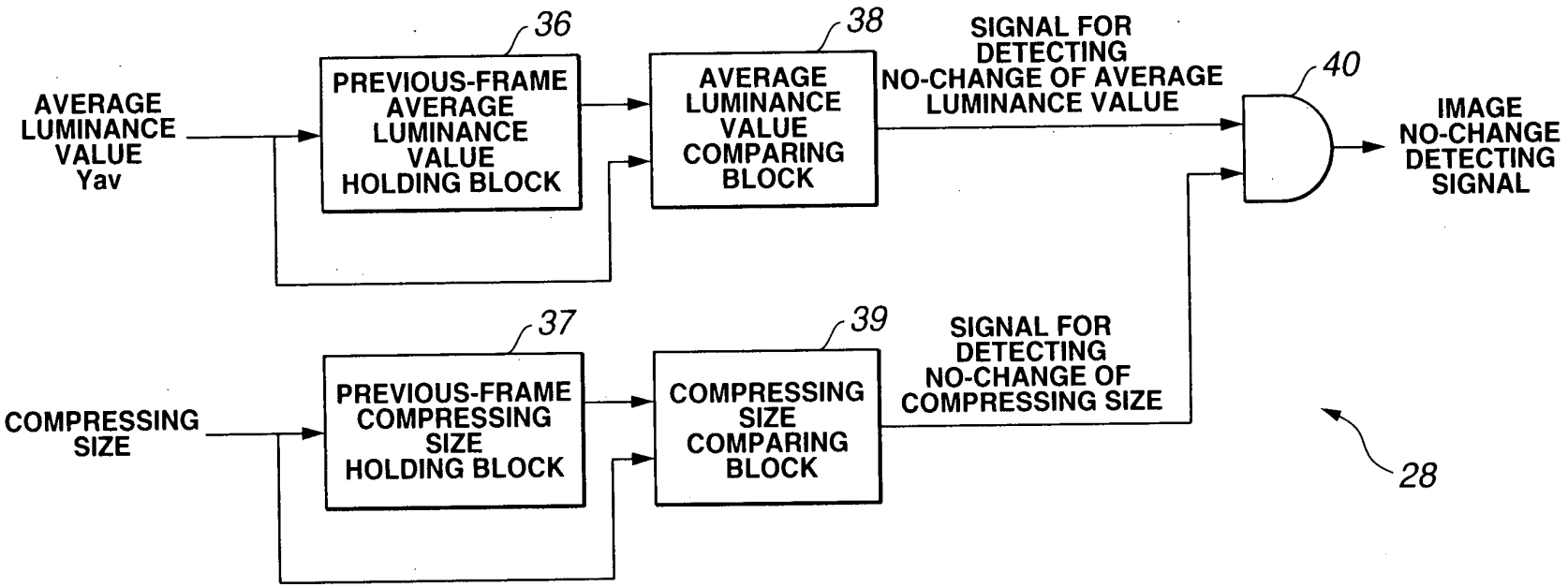

AVERAGE LUMINANCE VALUE Yav
36
PREVIOUS-FRAME AVERAGE LUMINANCE VALUE HOLDING BLOCK
38
AVERAGE LUMINANCE VALUE COMPARING BLOCK
SIGNAL FOR DETECTING NO-CHANGE OF AVERAGE LUMINANCE VALUE
40
IMAGE NO-CHANGE DETECTING SIGNAL
COMPRESSING SIZE
37
PREVIOUS-FRAME COMPRESSING SIZE HOLDING BLOCK
39
COMPRESSING SIZE COMPARING BLOCK
SIGNAL FOR DETECTING NO-CHANGE OF COMPRESSING SIZE
28

FIG.9

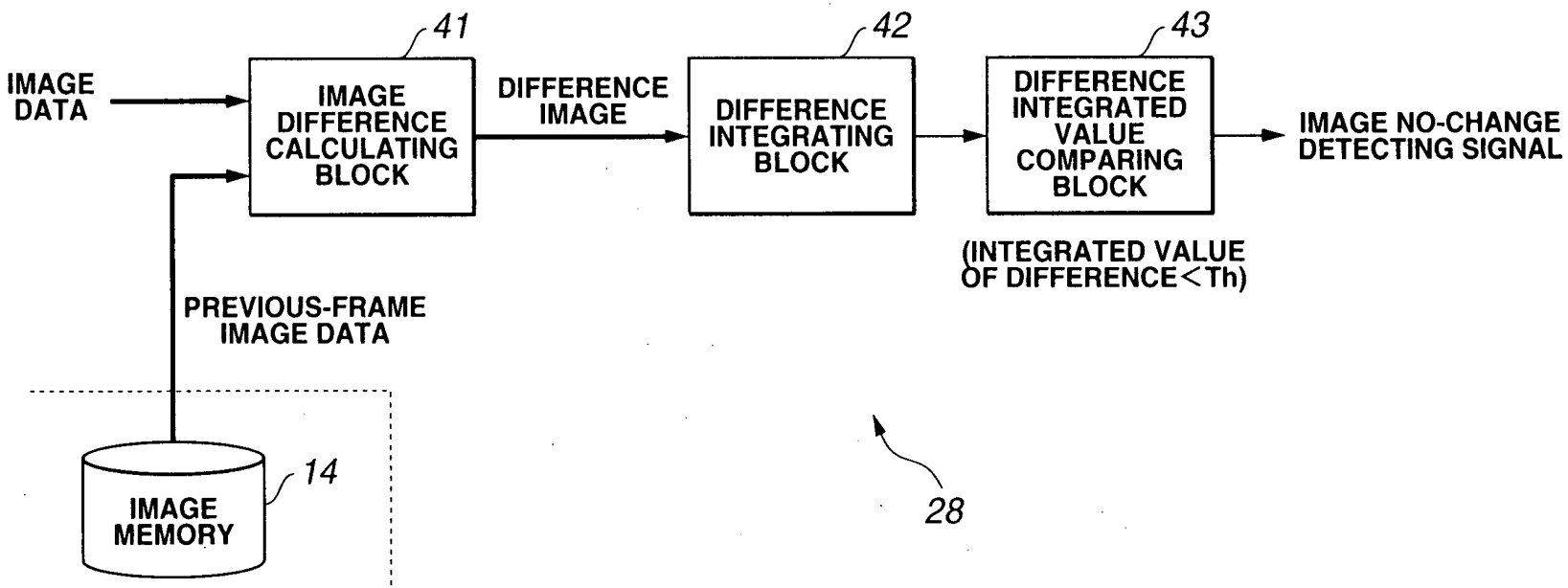

41
42
43
IMAGE DATA
IMAGE DIFFERENCE CALCULATING BLOCK
DIFFERENCE IMAGE
DIFFERENCE INTEGRATING BLOCK
DIFFERENCE INTEGRATED VALUE COMPARING BLOCK
IMAGE NO-CHANGE DETECTING SIGNAL
(INTEGRATED VALUE OF DIFFERENCE<Th)
PREVIOUS-FRAME IMAGE DATA
IMAGE MEMORY
14
28

FIG.10

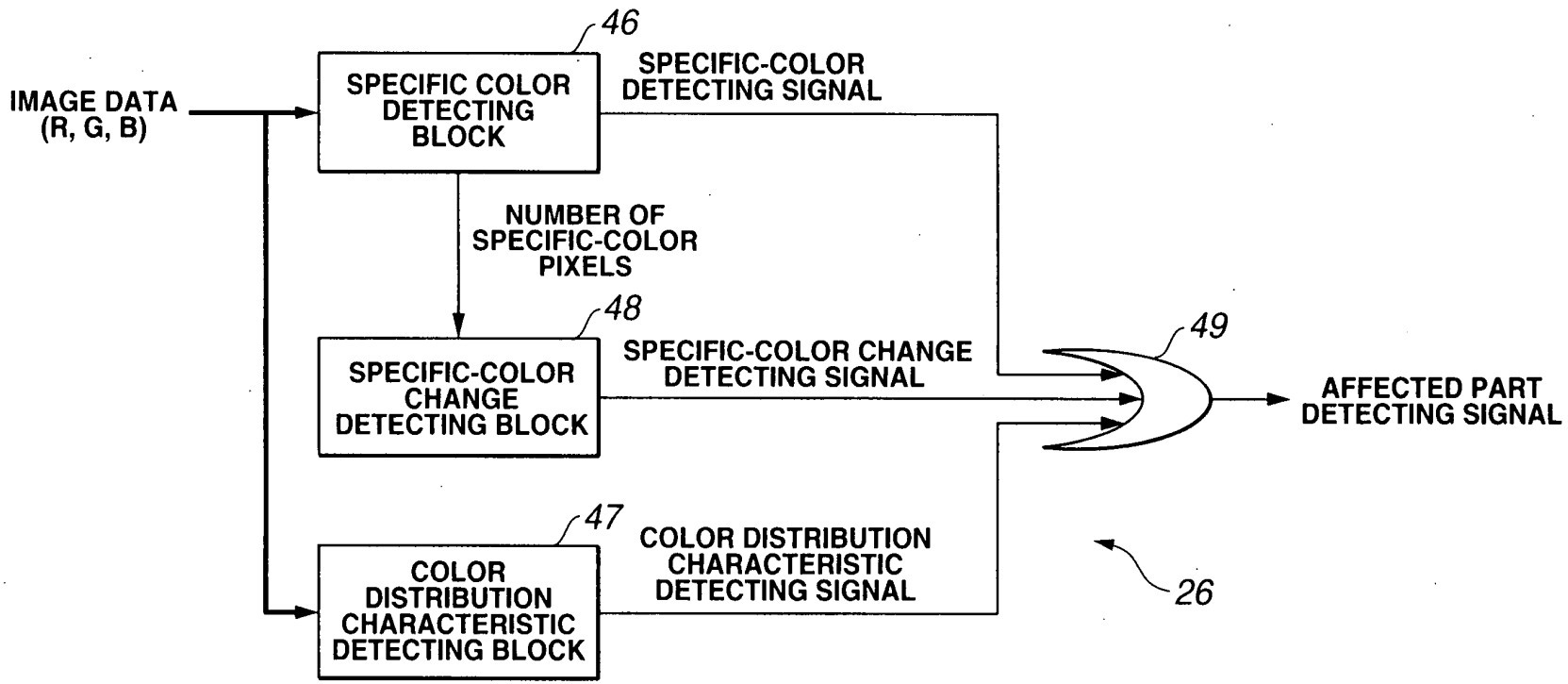


IMAGE DATA
(R, G, B)
46
SPECIFIC COLOR DETECTING BLOCK
SPECIFIC-COLOR DETECTING SIGNAL
NUMBER OF SPECIFIC-COLOR PIXELS
48
SPECIFIC-COLOR CHANGE DETECTING BLOCK
SPECIFIC-COLOR CHANGE DETECTING SIGNAL
49
AFFECTED PART DETECTING SIGNAL
47
COLOR DISTRIBUTION CHARACTERISTIC DETECTING BLOCK
COLOR DISTRIBUTION CHARACTERISTIC DETECTING SIGNAL
26

FIG.11

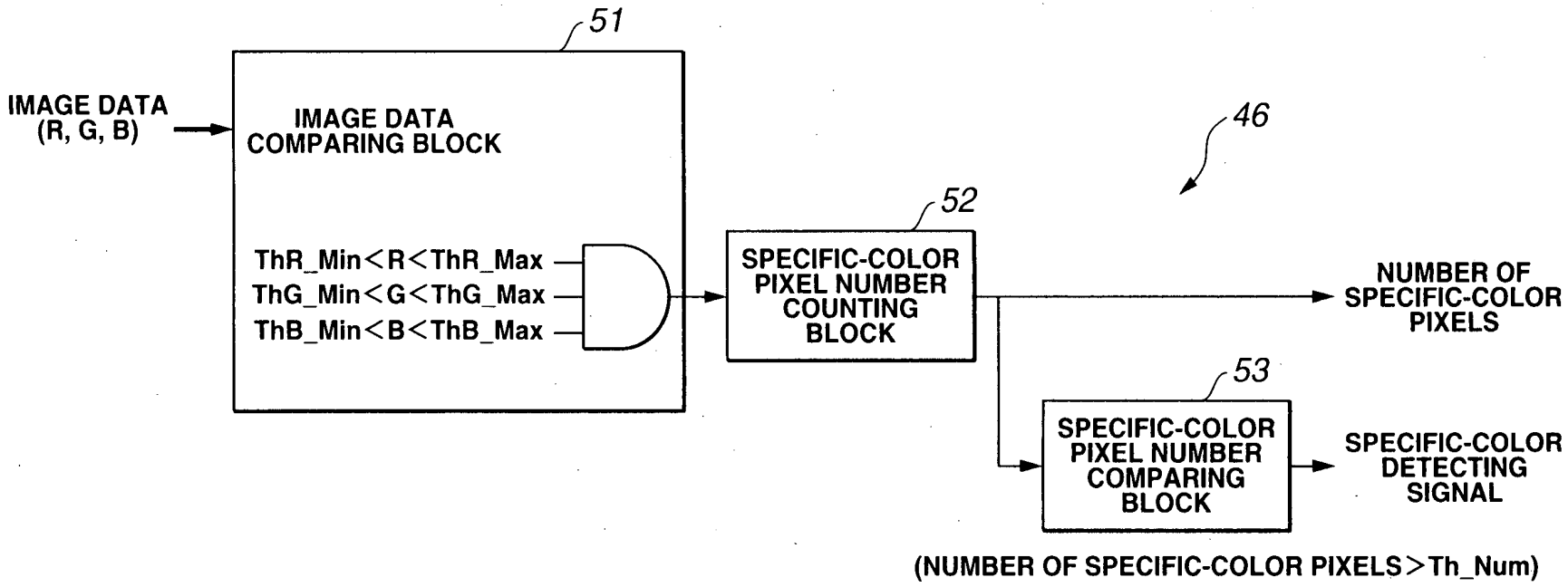

51
IMAGE DATA
(R, G, B)
IMAGE DATA
COMPARING BLOCK
ThR_Min<R<ThR_Max
ThG_Min<G<ThG_Max
ThB_Min<B<ThB_Max
46
52
SPECIFIC-COLOR
PIXEL NUMBER
COUNTING
BLOCK
NUMBER OF
SPECIFIC-COLOR
PIXELS
53
SPECIFIC-COLOR
PIXEL NUMBER
COMPARING
BLOCK
SPECIFIC-COLOR
DETECTING
SIGNAL
(NUMBER OF SPECIFIC-COLOR PIXELS>Th_Num)

FIG.12

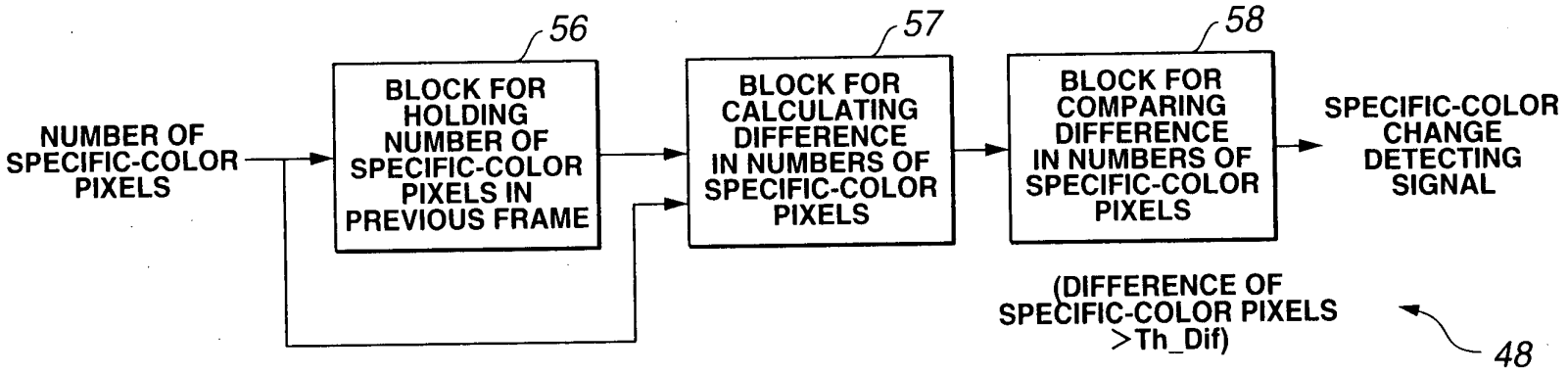

NUMBER OF SPECIFIC-COLOR PIXELS
56
BLOCK FOR HOLDING NUMBER OF SPECIFIC-COLOR PIXELS IN PREVIOUS FRAME
57
BLOCK FOR CALCULATING DIFFERENCE IN NUMBERS OF SPECIFIC-COLOR PIXELS
58
BLOCK FOR COMPARING DIFFERENCE IN NUMBERS OF SPECIFIC-COLOR PIXELS
SPECIFIC-COLOR CHANGE DETECTING SIGNAL
(DIFFERENCE OF SPECIFIC-COLOR PIXELS >Th_Dif)
48

FIG.13

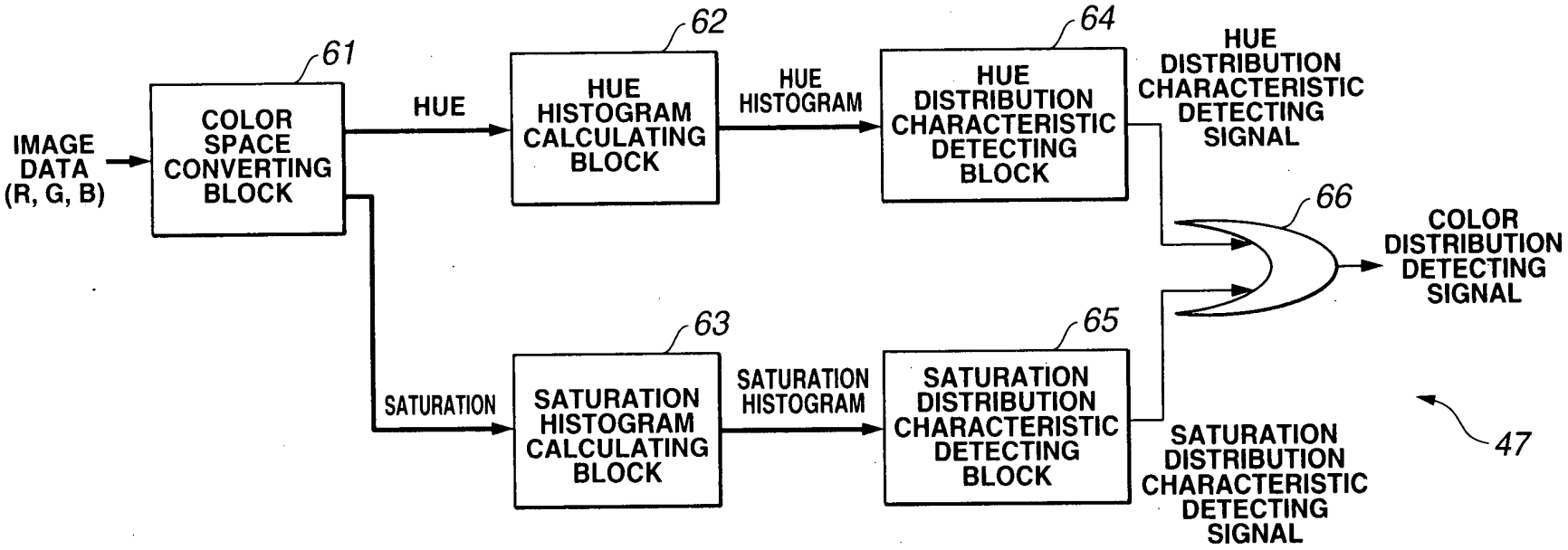


IMAGE DATA (R, G, B)
COLOR SPACE CONVERTING BLOCK
61
HUE
HUE HISTOGRAM CALCULATING BLOCK
62
HUE HISTOGRAM
HUE DISTRIBUTION CHARACTERISTIC DETECTING BLOCK
64
HUE DISTRIBUTION CHARACTERISTIC DETECTING SIGNAL
SATURATION
SATURATION HISTOGRAM CALCULATING BLOCK
63
SATURATION HISTOGRAM
SATURATION DISTRIBUTION CHARACTERISTIC DETECTING BLOCK
65
SATURATION DISTRIBUTION CHARACTERISTIC DETECTING SIGNAL
66
COLOR DISTRIBUTION DETECTING SIGNAL
47

FIG.14A

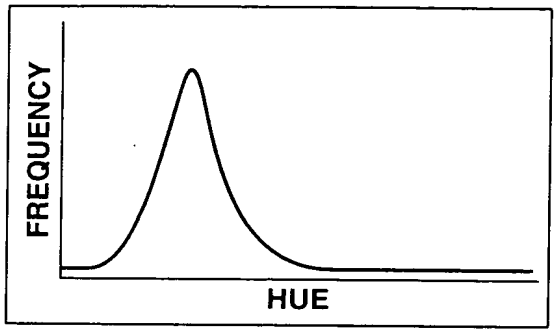


FIG.14B

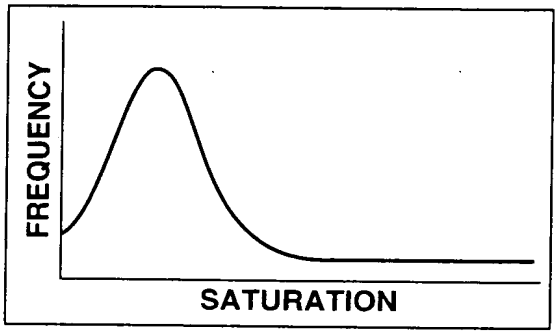


FIG.14C

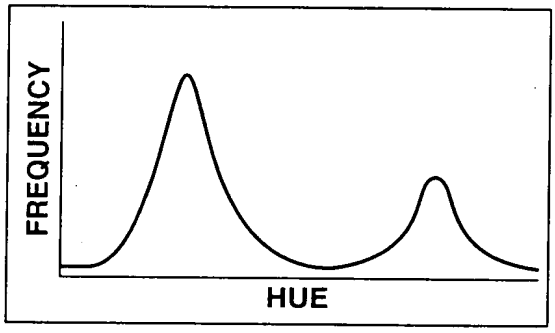


FIG.14D

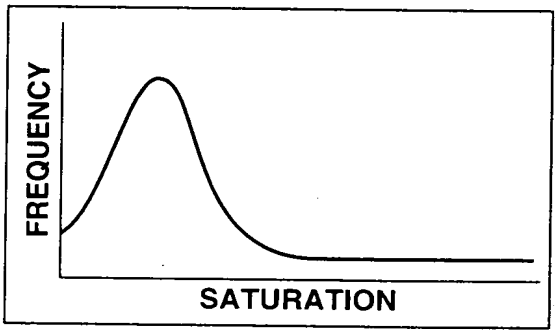


FIG.14E

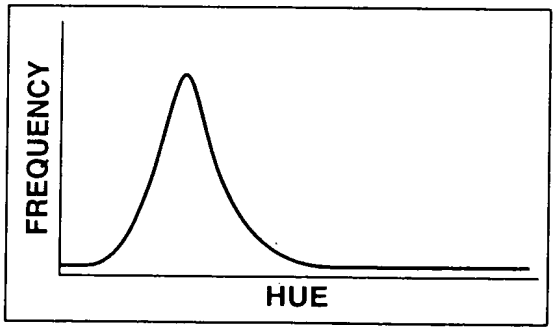


FIG.14F

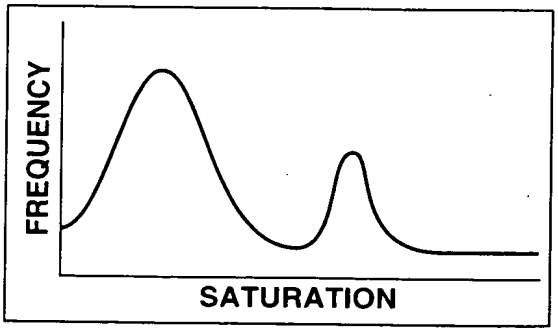


FIG.15

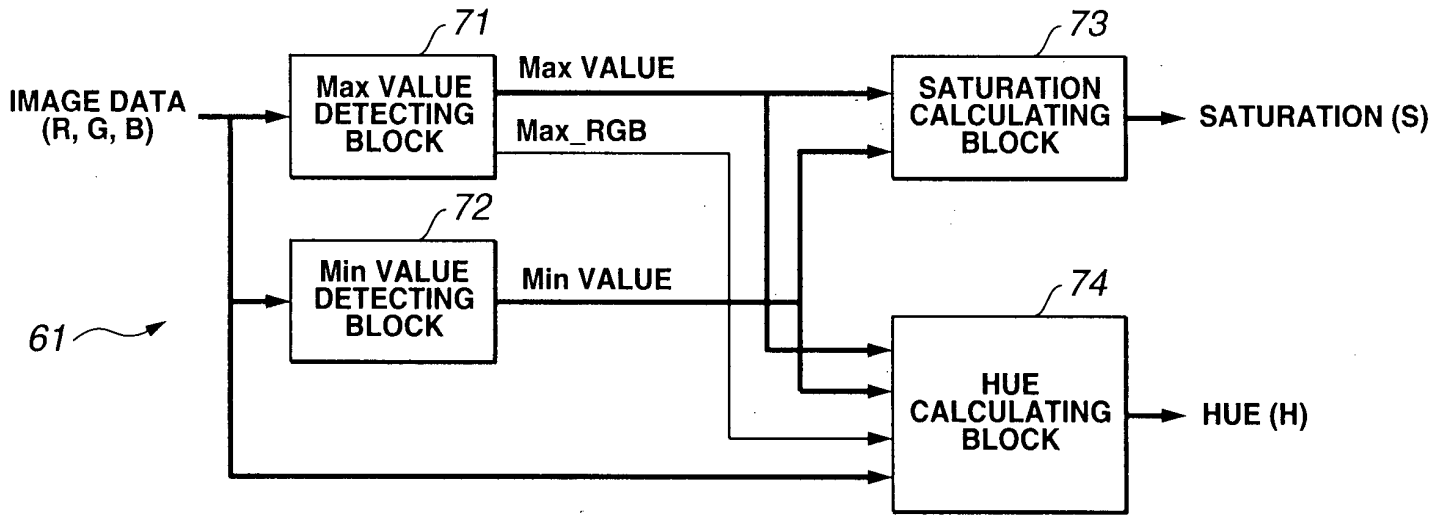

71
Max VALUE DETECTING BLOCK
Max VALUE
Max_RGB
73
SATURATION CALCULATING BLOCK
SATURATION (S)
IMAGE DATA (R, G, B)
72
Min VALUE DETECTING BLOCK
Min VALUE
74
61
HUE CALCULATING BLOCK
HUE (H)

FIG.16

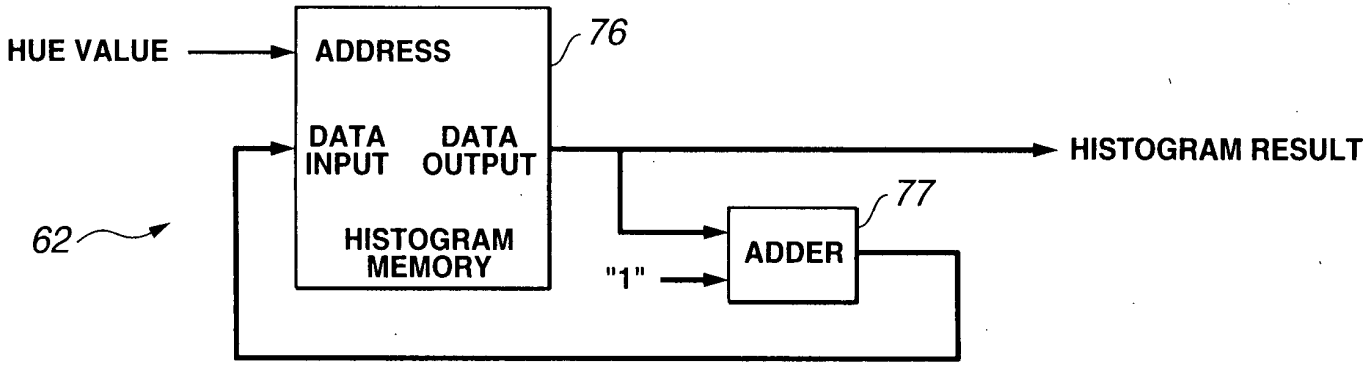

HUE VALUE
ADDRESS
76
DATA INPUT
DATA OUTPUT
HISTOGRAM RESULT
62
HISTOGRAM MEMORY
77
"1"
ADDER

FIG.17A

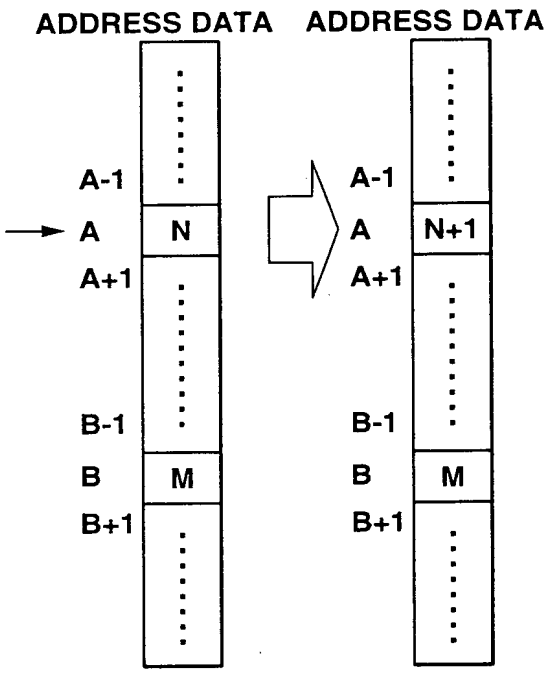


FIG.17B

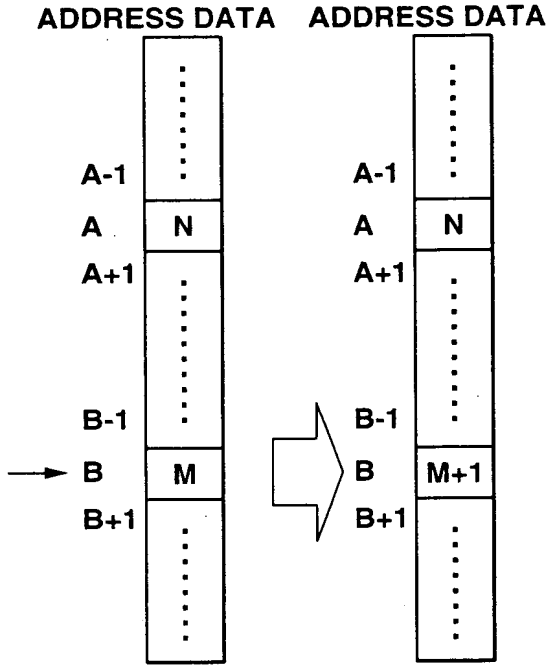


FIG.18

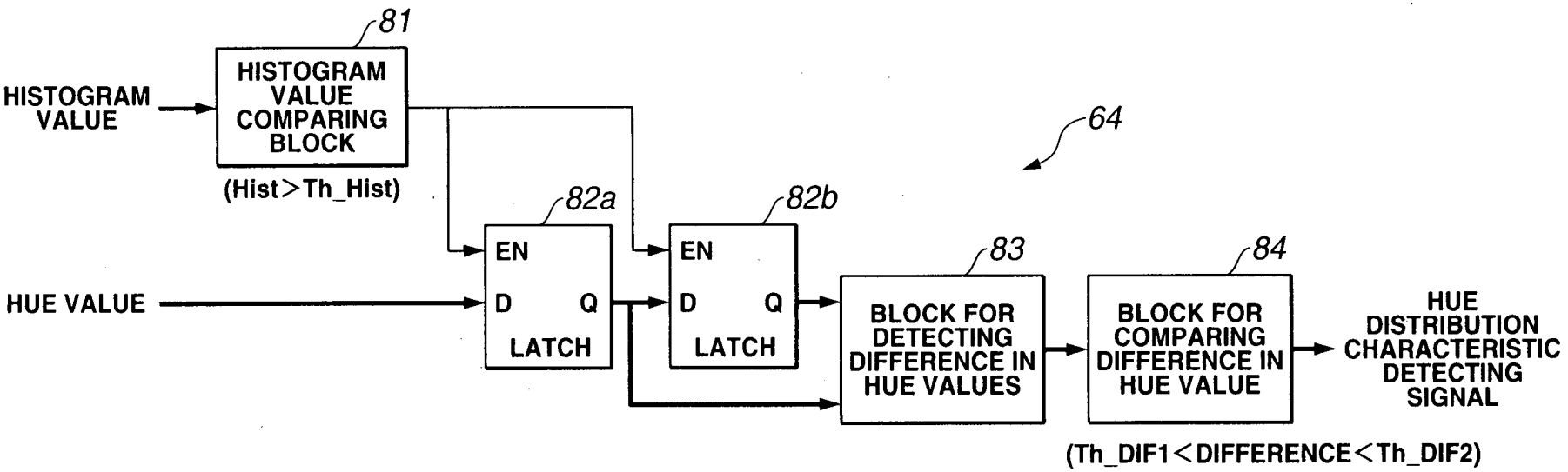

81
HISTOGRAM VALUE
HISTOGRAM VALUE COMPARING BLOCK
(Hist>Th_Hist)
64
82a
82b
EN
D
Q
LATCH
HUE VALUE
83
BLOCK FOR DETECTING DIFFERENCE IN HUE VALUES
84
BLOCK FOR COMPARING DIFFERENCE IN HUE VALUE
HUE DISTRIBUTION CHARACTERISTIC DETECTING SIGNAL
(Th_DIF1<DIFFERENCE<Th_DIF2)

FIG.19A

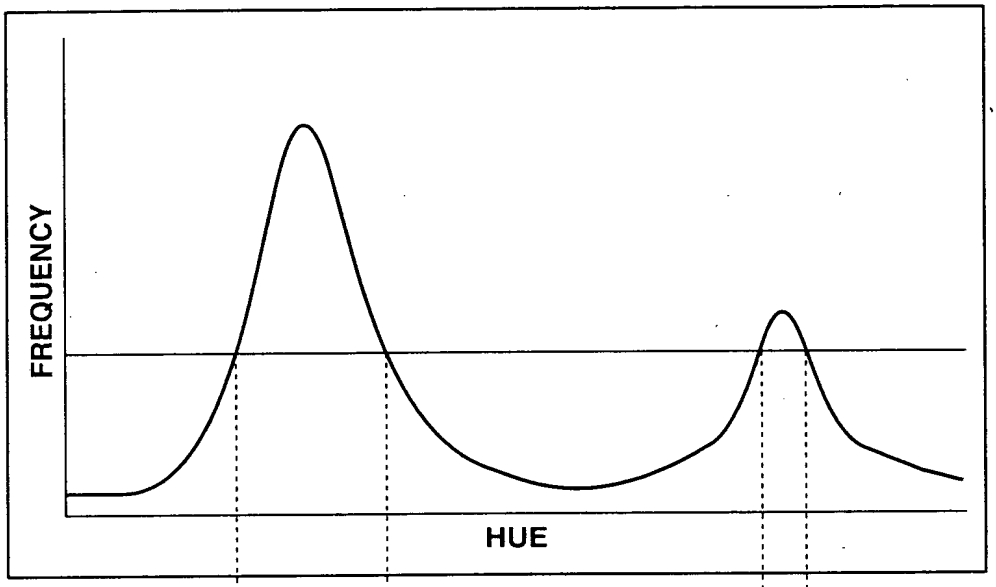


FIG.19B

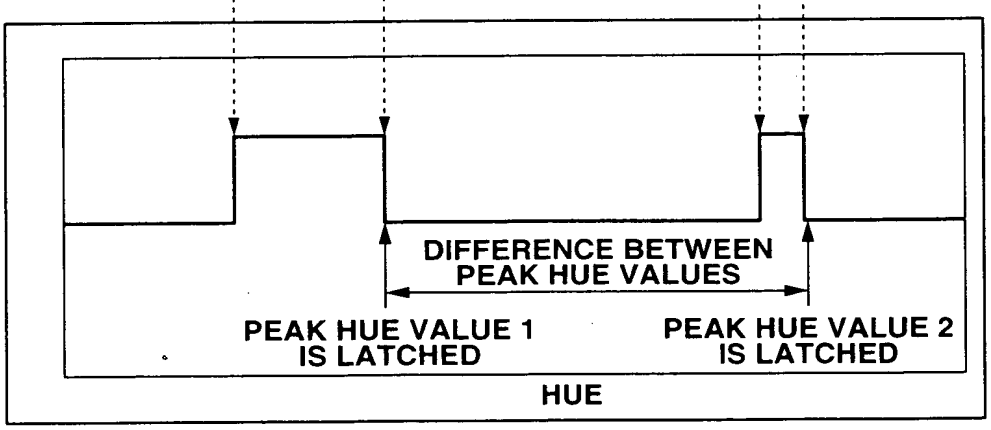


FIG.20

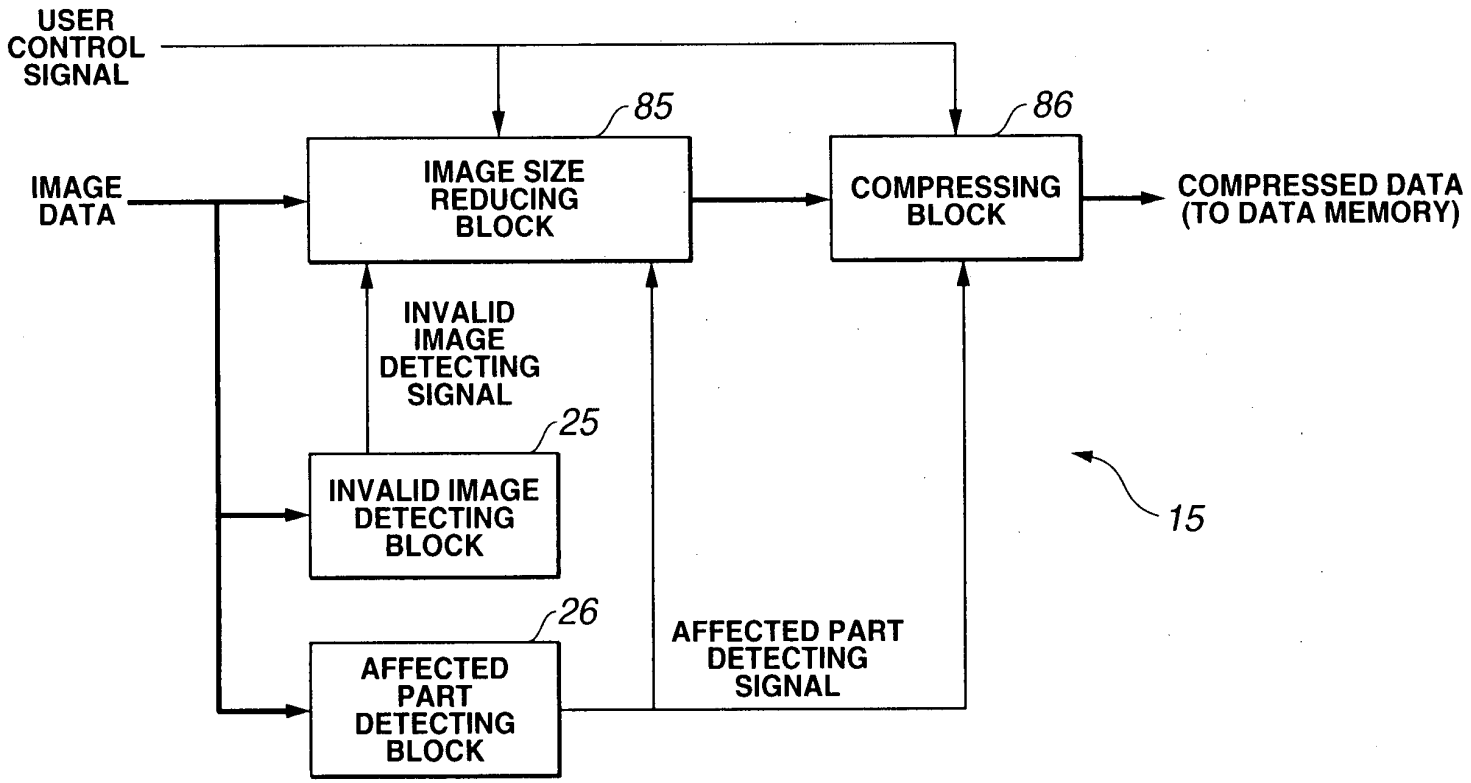

USER CONTROL SIGNAL
IMAGE DATA
85
IMAGE SIZE REDUCING BLOCK
86
COMPRESSING BLOCK
COMPRESSED DATA (TO DATA MEMORY)
INVALID IMAGE DETECTING SIGNAL
25
INVALID IMAGE DETECTING BLOCK
26
AFFECTED PART DETECTING BLOCK
AFFECTED PART DETECTING SIGNAL
15

FIG.21

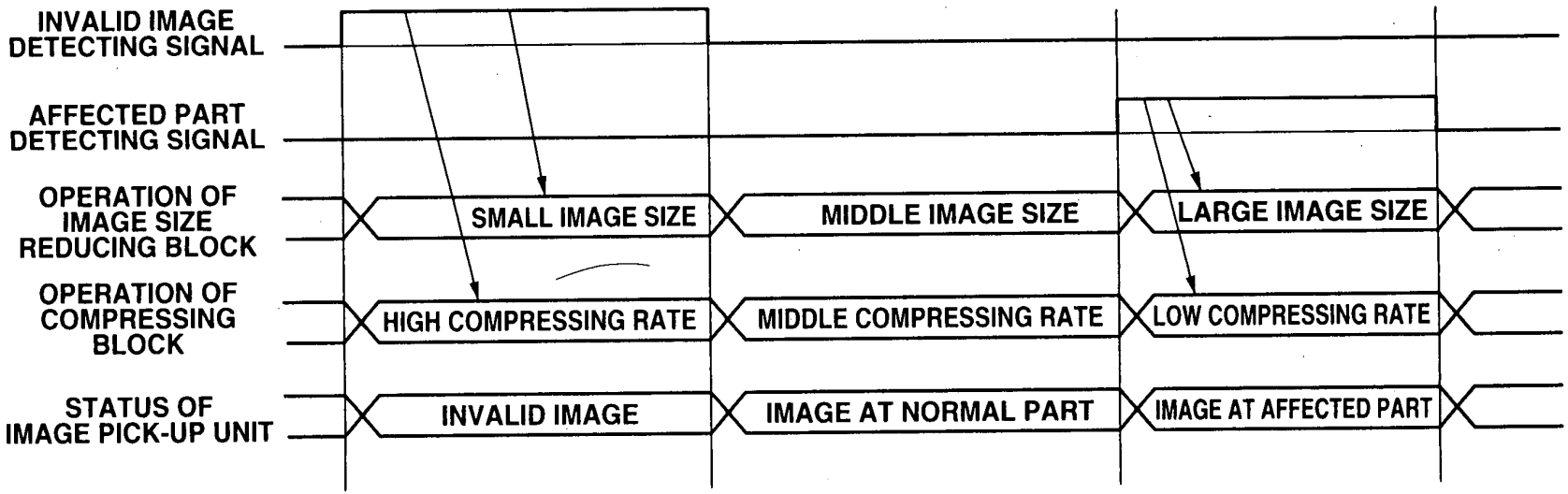

INVALID IMAGE DETECTING SIGNAL
AFFECTED PART DETECTING SIGNAL
OPERATION OF IMAGE SIZE REDUCING BLOCK
OPERATION OF COMPRESSING BLOCK
STATUS OF IMAGE PICK-UP UNIT
SMALL IMAGE SIZE
MIDDLE IMAGE SIZE
LARGE IMAGE SIZE
HIGH COMPRESSING RATE
MIDDLE COMPRESSING RATE
LOW COMPRESSING RATE
INVALID IMAGE
IMAGE AT NORMAL PART
IMAGE AT AFFECTED PART

FIG.22A

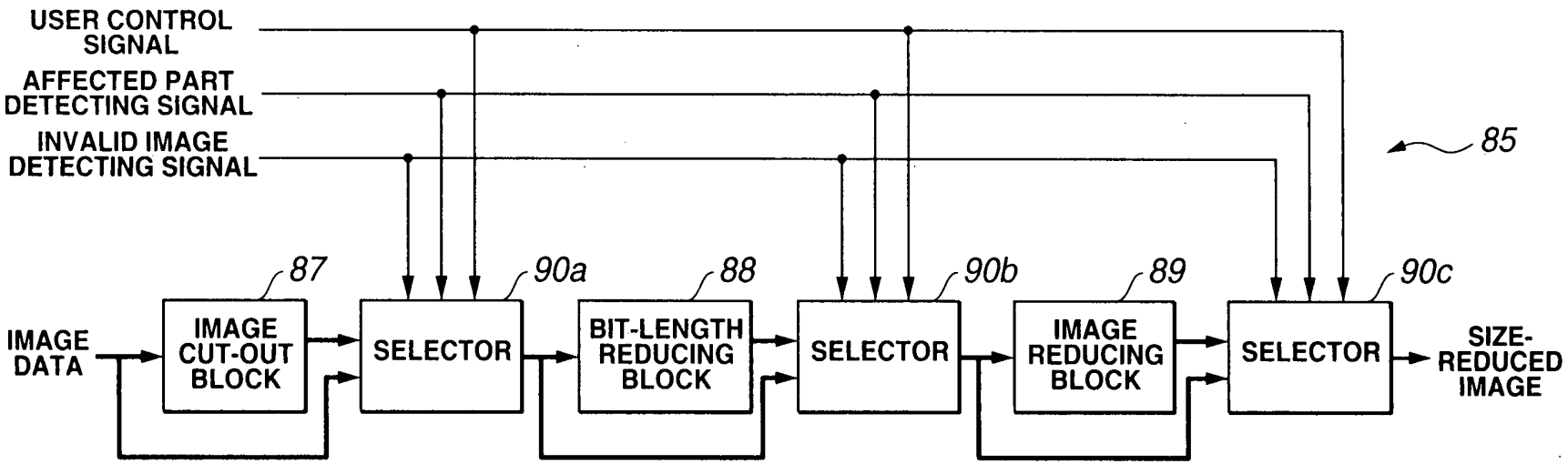
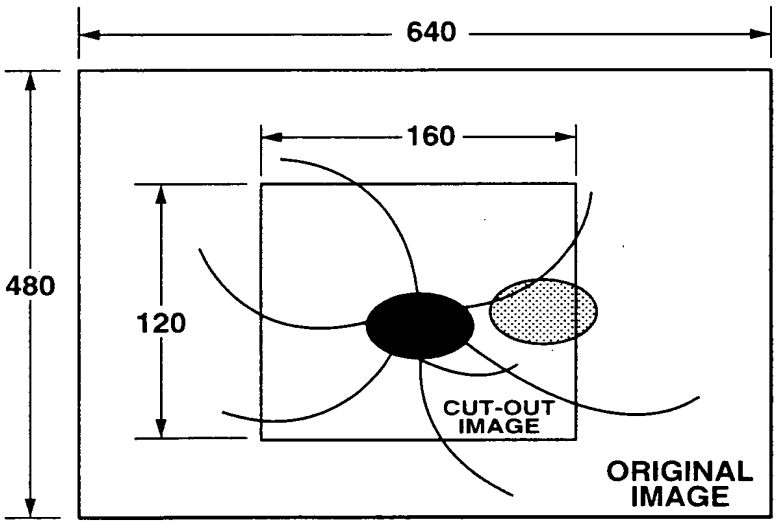


FIG.22B

	IMAGE CUT-OFF BLOCK	BIT-LENGTH REDUCING BLOCK	IMAGE REDUCING BLOCK
INVALID IMAGE	ON	ON	ON
PICK UP IMAGE OF NORMAL PART	OFF	OFF	ON
PICK UP IMAGE OF AFFECTED PART	OFF	OFF	OFF

BEST AVAILABLE COPY

FIG.23



BEST AVAILABLE COPY

FIG.24

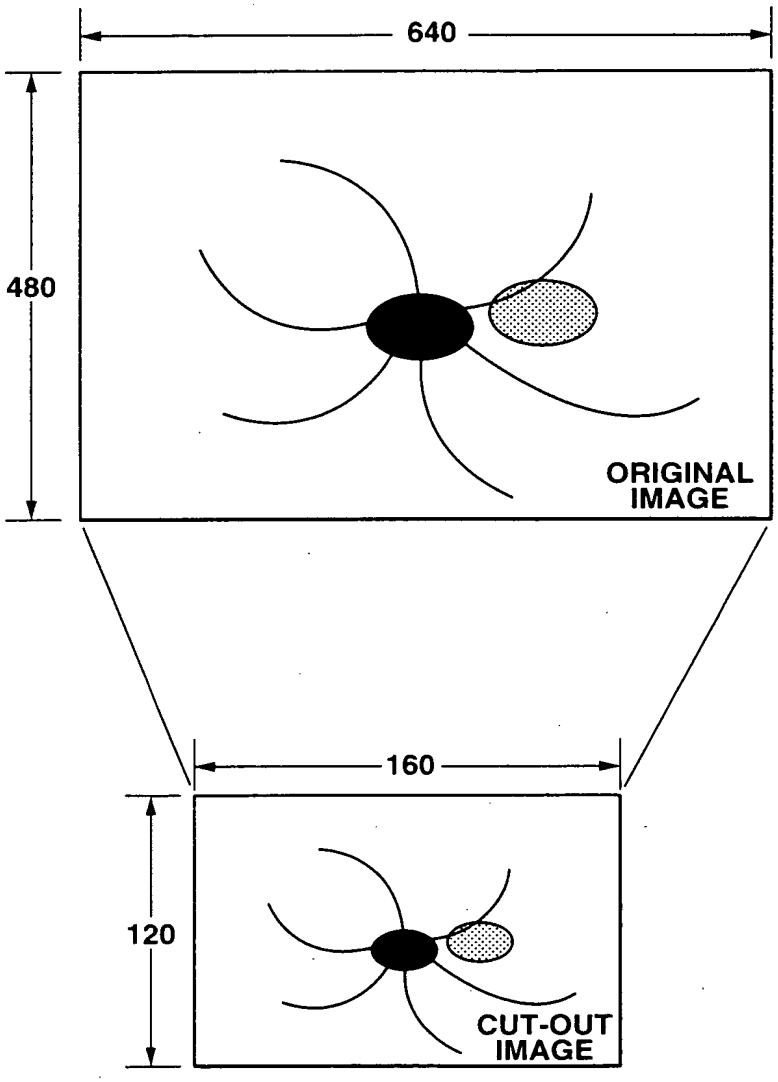
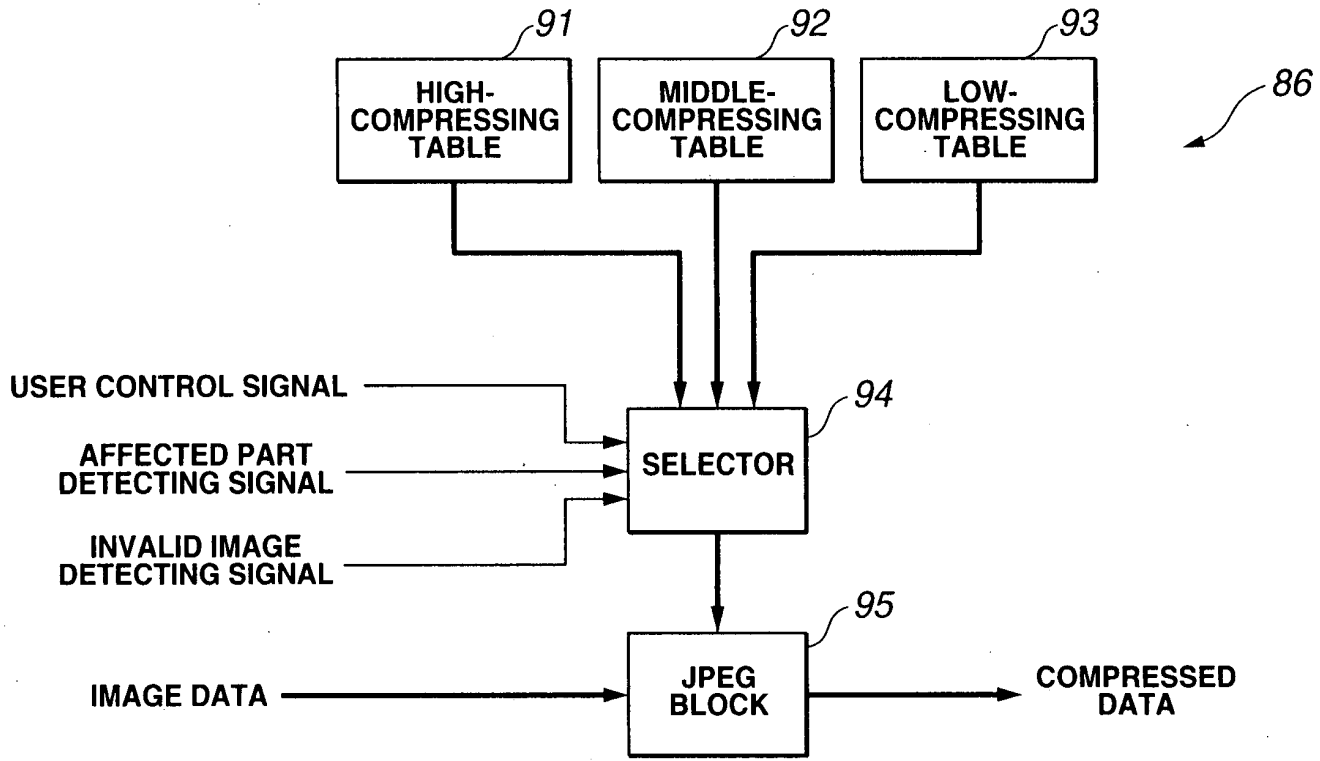


FIG.25


91
92
93
86
HIGH-COMPRESSING TABLE
MIDDLE-COMPRESSING TABLE
LOW-COMPRESSING TABLE
USER CONTROL SIGNAL
AFFECTED PART DETECTING SIGNAL
INVALID IMAGE DETECTING SIGNAL
94
SELECTOR
95
IMAGE DATA
JPEG BLOCK
COMPRESSED DATA